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## ON THE IDENTITY OF BLANCO'S SPECIES OF BAMBU<sup>S</sup>A

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In the year 1837 Blanco<sup>1</sup> described eight species of bamboo under the generic name *Bambus*, which, for the most part, have not been at all understood by later authors. It should be borne in mind that Blanco preserved no herbarium material, and that his descriptions, judged by modern standards, are very imperfect. Later authors having little or no botanical material from the Philippines, and having no special knowledge of field conditions in the Archipelago have usually merely enumerated Blanco's species with abbreviated descriptions compiled from the data given by Blanco. The single attempt previously made to reduce Blanco's species is notably inaccurate.

Steudel<sup>2</sup> includes all of Blanco's species with abbreviated descriptions under Blanco's names, except for *Bambusa mitis* Blanco which he changed to *Bambusa blancoi* Steud. Miquel<sup>3</sup> merely follows Steudel in his treatment of Blanco's species. Munro, in his monograph of the Bambuseae,<sup>4</sup> includes all of Blanco's species under "Bambusae minus notae" with abbreviated descriptions, accepting Steudel's *Bambusa blancoi* in place of *Bambusa mitis* Blanco. The next consideration of the Philippine species was by Fernandez-Villar,<sup>5</sup> who arbitrarily reduced all of Blanco's species to those of other authors, species that, with one exception, do not occur in the Philippines. With one exception all of F.-Villar's reductions are erroneous. In 1905 I was obliged to enumerate six of Blanco's species as unknown,<sup>6</sup> but am confident that the remaining two were correctly reduced. At this time very few specimens of Philippine bamboos had been collected in flower. As botanical exploration progressed, however, there was a rapid increase in fertile bamboo material, and in 1910 the accumu-

<sup>1</sup> Fl. Filip. 268-272. 1837; ed. 2. 187-189. 1845; ed. 3, 3: 333-338. 1879.

<sup>2</sup> Syn. Plant. Glum. 1: 331. 1854.

<sup>3</sup> Fl. Ind. Batav. 3: 420-21. 1855.

<sup>4</sup> Trans. Linn. Soc. 26: 1-157. 1868.

<sup>5</sup> Novis. App. Fl. Filip. 323, 324. 1880.

<sup>6</sup> A Review of the Identifications of the Species described in Blanco's Flora de Filipinas. Govt. Lab. Publ. (Philip.) 27: 1-132. 1905.

lated collections were submitted to J. Sykes Gamble, Esq., for study. Mr. Gamble<sup>7</sup> published a critical enumeration of the species recognizing seven genera and twenty-five species. In a supplementary paper<sup>8</sup> he has added two genera and six species, making the total of known Philippine forms thirty-one, distributed in nine genera. Mr. Gamble, however, like other European botanists, had no detailed knowledge of the various forms as they occur in the field, and very wisely made no attempt to reduce Blanco's species; in fact he does not even enumerate them. Camus,<sup>9</sup> however, in his recent monograph of the group includes all of Gamble's species that were published before the year 1913, and at the same time includes all of Blanco's species, like Miquel, Steudel, and Munro, giving abbreviated descriptions from Blanco's data. Unlike Munro, however, he includes the species as valid ones, not as species of doubtful status. There is nothing to be gained in repeating these abbreviated descriptions of Blanco's species, for they are utterly inadequate as guides to the identification of the forms. Blanco's species should be either dropped entirely, or they should be interpreted with reference to all the data given by Blanco, growth form, habitat, distribution, time of flowering, uses, and native names. With a fair amount of field knowledge of the Philippines it is a comparatively easy matter for the local botanist to interpret most of Blanco's species, and to interpret them correctly. Without a knowledge of local conditions, the various types of vegetation, the native names and uses of plants, their relative abundance, distribution, time of flowering, etc., the task of correctly interpreting the species is a very difficult one. The case of the bamboos presents particular difficulties, as most species of bamboo rarely flower, and, without flowering specimens, attempts to classify the material meet with failure, especially as most of the Philippine bamboos are endemic. It is now possible correctly to interpret Blanco's species of bamboo, a task that would have been impossible before the Philippine collections were critically studied with reference to the entire Indo-Malayan bamboo flora. As was to be expected, most of Blanco's species are found to be the common and widely distributed ones in central Luzon at low altitudes, and all of them have been described by other

<sup>7</sup> The Bamboos of the Philippine Islands. Philippine Journ. Sci. C. Bot. 5: 267-281. 1910.

<sup>8</sup> Some Additional Bamboos of the Philippine Islands, op. cit. 8: 203-206. 1913.

<sup>9</sup> Les Bambusées 1-215. pl. 1-100. 1913.

authors under other names, some previous to Blanco, and some at a more recent date. In every case I am perfectly confident of the correctness of my interpretation of Blanco's species, and accordingly have not hesitated to accept his specific names where they prove to be valid. The eight species described by Blanco reduce to seven, two in the genus *Bambusa*, one in the genus *Gigantochloa*, and four in the genus *Schizostachyum*.

**BAMBUSA Schreber**

**BAMBUSA BLUMEANA** Schult. in Roem. & Schult. Syst. Veg. 7<sup>2</sup>: 1343.  
1830

*Bambus pungens* Blanco Fl. Filip. 270. 1837; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 119. 1868.

*Bambus arundo* Blanco, op. cit., ed. 2, 188, ed. 3. 1: 335. 1877, non Klein.

*Bambusa arundinacea* F.-Vill. Novis. App. 323. 1880, non Retz.

This species is widely distributed in the Philippines, occurring as a planted bamboo throughout the settled areas at low altitudes. It is certainly not a native of the Philippines, but a purposely introduced species and of prehistoric introduction. It is by far the most valuable building bamboo found in the Archipelago, and is very extensively utilized in all parts of the Philippines. The species originally described by Blanco as *Bambusa pungens* was changed by him in the second edition of his Flora de Filipinas to *Bambusa arundo*. *Bambusa arundinacea* F.-Vill. is merely a misidentification of *B. blumeana*, as *B. arundinacea* Retz. does not occur in the Philippines. *Bambusa blumeana* is remarkable for the very dense thicket of stiff, wiry, interlaced, much branched, very spiny branches that form an impenetrable thicket about the basal portions of the culms extending upward usually to a height of about two meters. *Arundarbor spinosa* Rumph. Herb. Amb. 4: 14. pl. 3 is unquestionably identical with *Bambusa blumeana*, but *Arundo agrestis* Lour. Fl. Cochinch. 72. 1790 (= *Bambusa agrestis* Poir. in Lam. Encycl. 7: 708. 1808) is almost certainly a synonym of *Bambusa arundinacea* Retz. Loureiro cites Rumphius's *Arundarbor spinosa* under his *Arundo agrestis*, but the description is based on actual specimens from Cochinchina. Both *Bambusa blumeana* and *B. arundinacea* occur in Cochinchina, but Loureiro's description applies to the latter better than to the former.

*BAMBUSA VULGARIS* Schrad.; Wendl. Collect. Pl. 2: 26. pl. 47. 1810

*Bambusa monogyna* Blanco Fl. Filip. 268. 1837, ed. 2. 187. 1845, ed. 3. 1: 333. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 119. 1868; Camus Bamb. 132. 1913.

*Bambusa mitis* Blanco, op. cit. 271, 187, 336, non Poir.

*Bambusa blancoi* Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 120. 1868; Camus, Bamb. 134. 1913.

*Dendrocalamus strictus* F.-Vill. Novis. App. 324. 1880, non Nees.

*Dendrocalamus sericeus* F.-Vill. l. c., non Munro.

This bamboo is widely distributed in the settled areas of the Philippines at low and medium altitudes, does not occur in the forested regions, and is usually, if not always, planted. It is not a native of the Philippines, but was undoubtedly purposely introduced in prehistoric times. *Bambusa monogyna* Blanco, for which he cites the Tagalog name *cauayang quiling* and *B. mitis* Blanco, for which he cites the Tagalog name *tiuanac*, are unquestionably the same species, which Blanco himself thought was possibly the case. The two native names are still in use in the vicinity of Manila exclusively for *Bambusa vulgaris* Schrad. *Bambusa blancoi* Steud. was merely a new name for *B. mitis* Blanco, non Poir., while *Dendrocalamus strictus* and *D. sericeus* are erroneous reductions of *Bambusa monogyna* and *B. mitis* on the part of F.-Villar; neither occurs in the Philippines.

### GIGANTOCHLOA Kurz

#### *Gigantochloa levis* (Blanco) comb. nov.

*Bambus levis* Blanco Fl. Filip. 272. 1837, ed. 2. 189. 1845, ed. 3. 1: 337. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 121. 1868; Camus, Bamb. 134. 1913.

*Dendrocalamus flagellifer* F.-Vill. Novis. App. 324. 1880, non Munro.

*Gigantochloa scribneriana* Merr. Philippine Journ. Sci. Suppl. 1: 270. 1906.

This species is of wide distribution in the northern and central Philippines but is of local occurrence and is always planted, good evidence that it is not a native of the Archipelago, but like *Bambusa vulgaris* and *B. blumeana*, an introduced species. It is apparently very closely allied to and possibly identical with *Gigantochloa robusta*

Kurz, but at any rate Blanco's specific name is much the older. There is quite no doubt as to the identity of Blanco's *Bambusa levis*, for his description, while imperfect, applies only to the form I described as *Gigantochloa scribneriana* among all the Philippine species of bamboo.

### SCHIZOSTACHYUM Nees

#### *Schizostachyum diffusum* (Blanco) comb. nov.

*Bambus diffusa* Blanco Fl. Filip. 269. 1837, ed. 2. 188. 1845, ed. 3. 1: 334. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 118. 1868; Camus, Bamb. 131. 1913.

*Schizostachyum acutiflorum* Munro, Trans. Linn. Soc. 26: 137. 1868; Gamble, Philippine Journ. Sci. C. Bot. 5: 273. 1910; Camus, Bamb. 184. pl. 95, f. A. 1913.

*Dinochloa diffusa* Merr. Govt. Lab. Publ. (Philip.) 27: 93. 1905.

*Dinochloa major* Pilger; Perkins, Fragm. Fl. Phil. 149. 1904.

This scadent bamboo is one of the most common and widely distributed sylvan species in the Philippines, and unlike most other Philippine bamboos it apparently flowers freely each year. Consequently it is much better represented in collections than any other Philippine form. It is distinctly variable, which leads me to suspect that *Schizostachyum dielsianum* (Pilg.) Merr. may not really be specifically distinct. Munro suggested that *Bambusa diffusa* Blanco was merely a variety of his *Schizostachyum acutiflorum*, while F.-Villar definitely made the reduction. I am now confident that *Bambusa diffusa* Blanco and *Schizostachyum acutiflorum* Munro are identical. Philippine material is now available in which the leaves are somewhat pubescent on the lower surface, thus agreeing with Blanco's description "pelosas por debajo," material that otherwise cannot be distinguished from typical *Schizostachyum acutiflorum* Munro. Blanco's description otherwise as to habit, habitat time of flowering, native names, and uses closely applies. The oldest specific name is here adopted.

#### *Schizostachyum lima* (Blanco) comb. nov.

*Bambus lima* Blanco, Fl. Filip. 271. 1837, ed. 2. 189. 1845, ed. 3. 1: 336. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 121. 1868; Camus, Bamb. 134. 1913.

*Bambusa longinodis* F.-Vill. Novis. App. 323. 1880, non Miq.

*Schizostachyum hallieri* Gamble, Philippine Journ. Sci. C. Bot. 5: 274. 1910.

The identity of this species is unquestionable, as it is the only bamboo known from the Philippines with very long internodes, a character expressly indicated by Blanco. Moreover it is the species invariably and consistently known to the Tagalogs as *anos*, the native name cited by Blanco. Gamble's objection to this identification of Blanco's *Bambusa lima*<sup>10</sup> was based on an erroneous translation of Blanco's description by Munro, whose description reads "foliis . . . angustis," while Blanco's original description reads "hojas . . . anchas," that is wide, not narrow leaves.

***Schizostachyum lumampao* (Blanco) comb. nov.**

*Bambus lumampao* Blanco Fl. Filip. 272. 1837, ed. 2. 189. 1845, ed. 3. 1: 338. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 118. 1868; Camus, Bamb. 132. 1913.

*Dendrocalamus membranaceus* F.-Vill. Novis. App. 324. 1880, non Munro.

*Schizostachyum mucronatum* Hack. Philippine Journ. Sci. C. Bot. 3: 169. 1908; Gamble op. cit. 5: 276. 1910; Camus, Bamb. 175. 1913.

There is quite no doubt as to the correctness of this interpretation of Blanco's *Bambusa lumampao*. While the description is short and imperfect, it applies entirely to *Schizostachyum mucronatum*. This bamboo is exceedingly abundant in the provinces near Manila, is gregarious over large areas, and quickly occupies deserted clearings on the hills and lower slopes of mountains to the practical exclusion of other forms of vegetation. While now more commonly known to the natives as *boho* or *caña boho*, it is in some regions still known as *lumampao*, and in others as *bocaui*, the native names cited by Blanco. As Blanco states the culms are about as thick as one's wrist, and the canes are still brought to Manila for certain purposes, notably for the woven building material known as *saule*, used for making walls, partitions, and ceilings in light construction houses.

<sup>10</sup> Philippine Journ. Sci. C. Bot. 5: 275. 1910.

**Schizostachyum textorium** (Blanco) comb. nov.

*Bambus textoria* Blanco, Fl. Filip. 270. 1837, ed. 2. 189. 1845, ed. 3. 1: 335. 1877; Steud. Syn. Pl. Glum. 1: 331. 1854; Munro, Trans. Linn. Soc. 26: 122. 1868; Camus, Bamb. 135. 1913.

*Gigantochloa atter* F.-Vill. Novis. App. 323. 1880, non Kurz.

*Schizostachyum merrillii* Gamble, Philippine Journ. Sci. C. Bot. 5: 278. 1910.

Blanco's description is very short and imperfect, and he saw no flowering specimens. He cites the Tagalog name *calbang*, and states that the species is common in some, but not in all forests. For a number of years attempts to locate a bamboo known to the natives as *calbang* failed, but in the year 1914 a characteristic species was found to be commonly known by this name in Batangas Province, Luzon, a region from which Blanco received much of his botanical material. This Batangas *calbang* agrees with Blanco's description, so far as the description goes, and is identical with *Schizostachyum merrillii* Gamble. The oldest specific name is here adopted.